"Contact Potential Ionization Battery"

Concept:

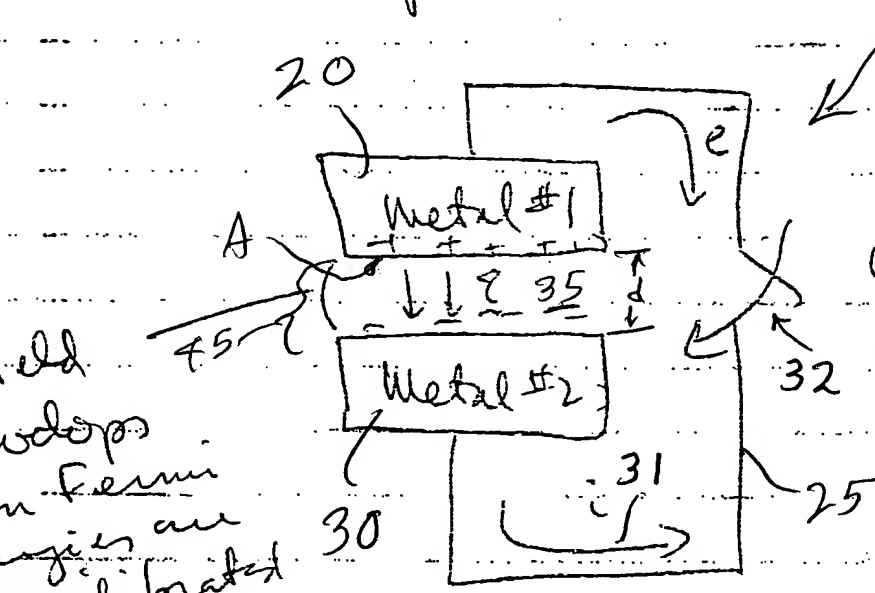


FIG. 1

Field develops when Fermi energies are equilibrated

Close switch; electrons flow to equil. Fermi Energies

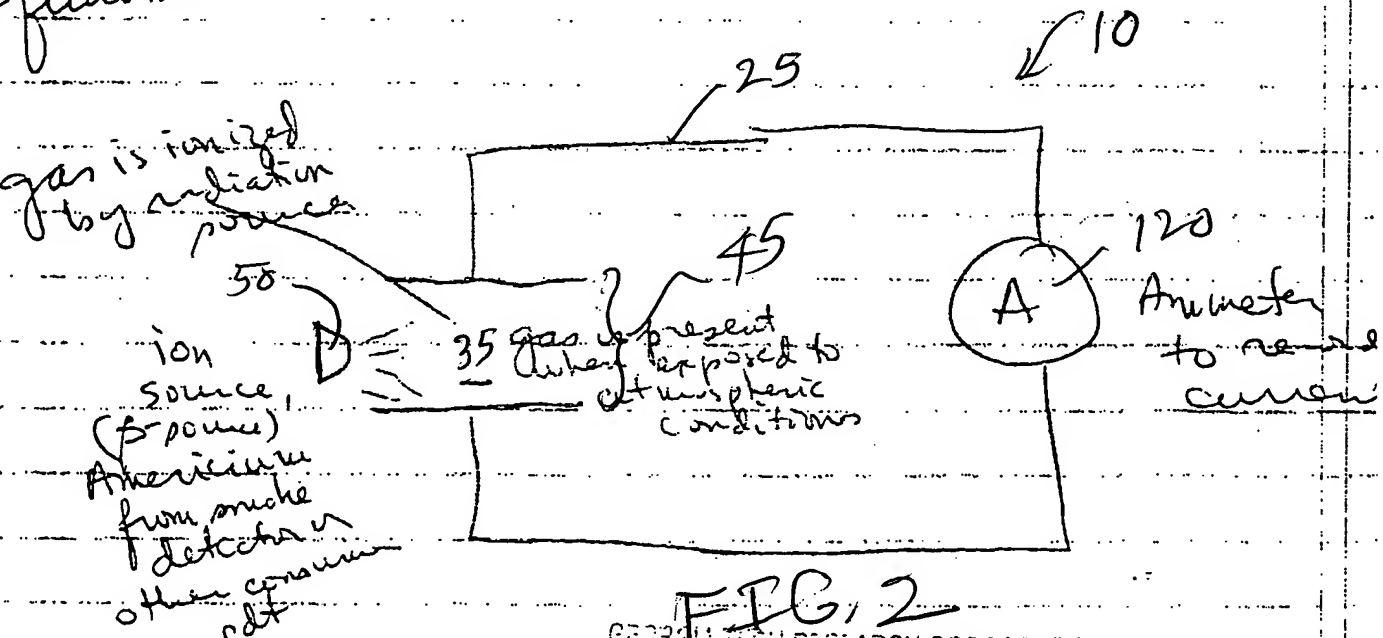


FIG. 2

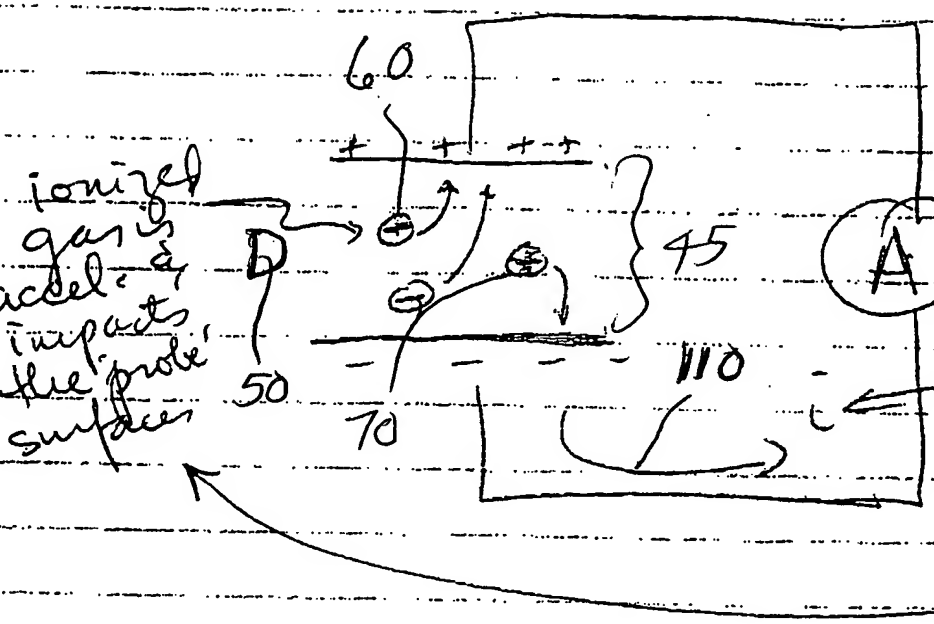


FIG. 3

$i \propto (\dot{\eta})(\Delta\Phi)$ (size of the probe surface)

$\dot{\eta}$ ← ionization rate

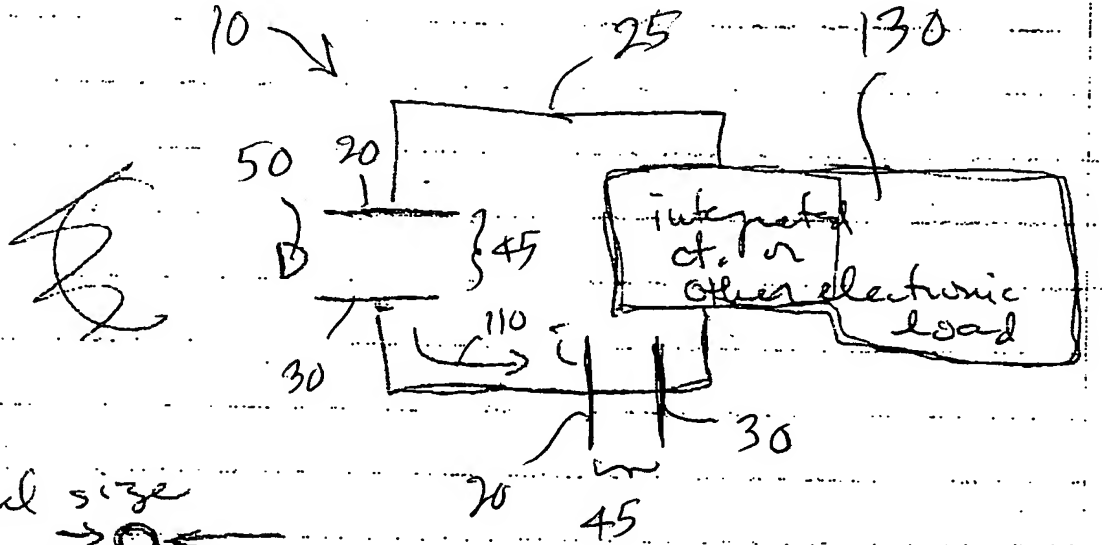
$\Delta\Phi$ ← work function difference

(1.) detail: $\dot{\eta}$ increases with pressure, temperature, type of gas, work function value (magnitude)

(2.) current is perpetual as long as gas is present and radiation source is present

3. current ~ 10^{-8} - 10^{-9} a
(of that order)

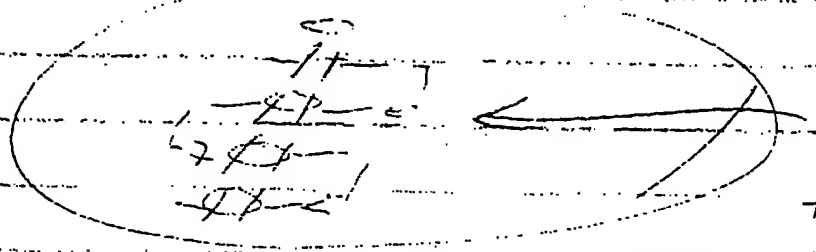
Therefore this current is
avail. to drive other elect.
devices



PTG. 4

typical size of Am. source

4. Can 'integrate' battery into silicon wafer



can stack in series to increase the current